

**What is Claimed Is:**

1. Method for producing phyllosilicate-intercalation compounds with at least one of an increased expansion rate and a modified onset temperature by intercalating an intercalate compound in native, expandable phyllosilicate, especially native vermiculite, wherein at least one representative of the group comprising alcoholates of lithium and potassium and salts of lithium, sodium and potassium with organic acids is intercalated by cationic exchange in the native phyllosilicate.

2. The method of Claim 1, wherein a salt of an optionally substituted, organic carboxylic acid with one or more carboxyl groups is intercalated as intercalate compound.

3. The method of Claim 2, wherein an optionally substituted organic carboxylic acid of the general formula  $R(\text{COOH})_n$ , in which R represents an optionally substituted alkyl, cycloalkyl, alkenyl, cycloalkenyl, aryl, arylalkyl, arylcycloalkyl, alkylaryl, cycloalkylaryl group with 1 to 30 and preferably with 1 to 18 carbon atoms and n is a whole number with a value of 1 to 4 and preferably of 1 or 2.

4. The method of Claims 2, wherein the organic carboxylic acid has, as substituents, one or more representatives of the group

comprising halogen atoms, ether, ester, amino, amide, hydroxy and urea groups.

5. The method of Claim 1, wherein a salt of formic acid, acetic acid, propionic acid, butyric acid, oxalic acid, tartaric acid, hexanoic acid, adipic acid, malonic acid, glycolic acid, citric acid, lactic acid, glyoxylic acid, trifluoroacetic acid salicylic acid, nitrilotriacetic acid and/or ethylenediaminetetraacetic acid (EDTA) is incorporated as intercalate compound.

6. The method of Claim 1, wherein an alcoholates of lithium or potassium with a monovalent or multivalent, aliphatic or aromatic alcohol is intercalated as intercalate compound.

7. The method of Claim 6, wherein an alcoholate of lithium or potassium with methanol, ethanol, 2-propanol, 2-butanol, t-butanol, benzyl alcohol, 1-decanol, ethylene glycol, 1, 3-dihydroxypropane, 1-4-dihydroxybutane and/or glycerin is intercalated as intercalate compound.

8. The method of Claim 1, wherein lithium citrate, lithium formate, lithium acetate, sodium acetate, sodium formate, sodium oxalate, sodium gluconate, sodium methylete, sodium ethylete, sodium propylete,

potassium acetate, potassium gluconate, potassium oxalate and/or the dipotassium salt of ethylenediaminetetraacetic acid is intercalated as intercalate compound.

9. The method of Claim 1, wherein expandable vermiculite, hydrobiotite and/or chlorite vermiculite with an average particle diameter of 0.1 mm to 10 mm and preferably of 0.3 to 1.0 mm is used as native, expandable phyllosilicate.

10. The method of Claim 1, wherein the phyllosilicate is suspended in a solution of the intercalate compound in a suitable solvent, the intercalation optionally is carried out with heating and the phyllosilicate-intercalation compound obtained is removed from the suspension and optionally washed and dried.

11. The method of Claim 10, wherein water, an aliphatic or aromatic alcohol, an ether, an ester, an alkane, a cycloalkane, an aromatic solvent and/or an amine is used as solvent.

12. The method of Claims 10, wherein the intercalate compound preferably is used in a concentration of 0.1 moles /L to 5.0 mi./L and preferably of 0.1 moles /L to 1.0 moles/L.

13. The method of Claim 10, wherein the intercalation reaction is carried out and a temperature of 10°C to 150°C and preferably of 25°C to 60°C.

14. The method of Claim 10, wherein the intercalation reaction is carried out for a reaction time of 0.5 to 144 hours and preferably of 10 to 36 hours.

15. The method of at least one of the Claim 10, wherein the phyllosilicate-intercalation compound is removed from the suspension by filtering or decanting, optionally washed with a few milliliters of the solvent used and then dried.

16. The method of Claim 15, wherein the drying is carried out at room temperature, under vacuum or in a drying oven at an elevated temperature.

17. The method off Claim 16, wherein the drying is carried out in a drying oven for 1 to 12 hours at 60° to 80°C.

18. Phyllosilicate-intercalation compound, produced by intercalating an intercalate compound in native, expandable phyllosilicate, especially native vermiculite, wherein at least one representative of the

group comprising alcoholates of lithium and potassium and salts of lithium, sodium and potassium with organic acids is intercalated by cationic exchange in the native phyllosilicate.

19. An intumescent material for use as intumescent, fire-retarding additive and/or in expanded form, can be used as additive for producing flame-retarding materials, as well as for preparing high temperature-resistant insulating panels and seals, especially for the fire-retarding sealing of through holes, wall bushings and other openings in at least one of walls, floors and/or ceilings of buildings, the intumescent material comprising a phyllosilicate intercalation compound produced by intercalating an intercalate compound in native, expandable phyllosilicate, especially native vermiculite, wherein at least one representative of the group comprising alcoholates of lithium and potassium and salts of lithium, sodium and potassium with organic acids is intercalated by cationic exchange in the native phyllosilicate.